

SEQUENCE LISTING

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<120> COMPOSITIONS AND METHODS FOR TREATING
 HUMAN PAPILLOMAVIRUS-MEDIATED DISEASE

<130> 08191-029US1

<140> US 10/532,168

<141> 2005-04-20

<150> PCT/US03/32705

<151> 2003-10-16

<150> US 60/420,068

<151> 2002-10-21

<150> US 60/471,481

<151> 2003-05-15

<160> 98

<170> FastSEQ for Windows Version 4.0

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<212> PRT

<213> Human papillomavirus

<400> 1

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Cys	Thr	Glu	Leu												
			20												

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<212> PRT

<213> Human papillomavirus

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Val	Tyr	Arg	Asp	Gly	Asn	Pro	Tyr								
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 Gln Gln Tyr Asn Lys
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<210> 4
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 Tyr Ser Tyr

<210> 5
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<210> 6
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 Pro

<210> 7
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 20 25 30
 Leu Thr Glu Val Phe Glu Phe Ala Phe Lys
 35 40

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 <213> Human papillomavirus

<400> 8
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 Leu Ile Arg Cys Leu Arg Cys Gln Lys
 20 25

<210> 9
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 <213> Human papillomavirus

<400> 9
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 1 5 10 15
 Ile Pro Val

<210> 10
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<400> 10
 His Thr Met Leu Cys Met Cys Cys Lys Cys Glu Ala Arg Ile
 1 5 10

<210> 11
 <211> 17
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<400> 11
 Ala Phe Gln Gln Leu Phe Leu Asn Thr Leu Ser Phe Val Cys Pro Trp
 1 5 10 15
 Cys

<210> 12
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 <213> Artificial Sequence

<220>
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<400> 12
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		20					25					30			
Asp	Leu	Cys	Ile	Val	Tyr	Arg	Asp	Gly	Asn	Pro	Tyr	Lys	Ile	Ser	Glu
	35						40					45			
Tyr	Arg	His	Tyr	Cys	Leu	Tyr	Gly	Thr	Thr	Leu	Glu	Gln	Gln	Tyr	Asn
	50					55					60				
Lys	Thr	Leu	His	Glu	Tyr	Met	Leu	Asp	Leu	Gln	Pro	Glu	Thr	Thr	Asp
65				70						75					80
Lys	Tyr	Gln	Ala	Glu	Pro	Asp	Arg	Ala	His	Tyr	Asn	Ile	Val	Thr	Phe
			85						90					95	
Leu	Leu	Met	Gly	Thr	Leu	Gly	Ile	Val	Cys	Pro	Ile	Cys	Ser	Gln	Lys
			100					105					110		
Pro	Arg	Arg	Pro	Tyr	Lys	Leu	Pro	Asp	Leu	Cys	Thr	Glu	Leu	Asn	Thr
	115						120					125			
Ser	Leu	Gln	Asp	Ile	Glu	Ile	Thr	Cys	Val	Tyr	Cys	Lys	Thr	Val	Leu
	130					135					140				
Glu	Leu	Thr	Glu	Val	Phe	Glu	Phe	Ala	Phe	Lys	Ser	Val	Tyr	Gly	Asp
145				150						155					160
Thr	Leu	Glu	Lys	Leu	Thr	Asn	Thr	Gly	Asn	Leu	Leu	Ile	Arg	Cys	Leu
			165					170						175	
Arg	Cys	Gln	Lys	Lys	Ala	Thr	Leu	Gln	Asp	Ile	Val	Leu	His	Leu	Glu
		180						185				190			
Pro	Gln	Asn	Glu	Ile	Pro	Val	His	Thr	Met	Leu	Cys	Met	Cys	Cys	Lys
	195					200					205				
Cys	Glu	Ala	Arg	Ile	Ala	Phe	Gln	Gln	Leu	Phe	Leu	Asn	Thr	Leu	Ser
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Phe	Val	Cys	Pro	Trp	Cys										
225					230										

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<211> 255

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		20						25					30		
Glu	Arg	Pro	Arg	Lys	Leu	Pro	Gln	Leu	Cys	Thr	Glu	Leu	Leu	Leu	Arg
	35					40						45			
Arg	Glu	Val	Tyr	Asp	Phe	Ala	Phe	Arg	Asp	Leu	Cys	Ile	Val	Tyr	Arg
	50				55						60				
Asp	Gly	Asn	Pro	Tyr	Lys	Ile	Ser	Glu	Tyr	Arg	His	Tyr	Cys	Leu	Tyr
65				70						75					80
Gly	Thr	Thr	Leu	Glu	Gln	Gln	Tyr	Asn	Lys	Thr	Leu	His	Glu	Tyr	Met
			85					90						95	
Leu	Asp	Leu	Gln	Pro	Glu	Thr	Thr	Asp	Lys	Tyr	Gln	Ala	Glu	Pro	Asp
		100						105					110		
Arg	Ala	His	Tyr	Asn	Ile	Val	Thr	Phe	Leu	Leu	Met	Gly	Thr	Leu	Gly
	115					120						125			
Ile	Val	Cys	Pro	Ile	Cys	Ser	Gln	Lys	Pro	Arg	Arg	Pro	Tyr	Lys	Leu

130		135		140
Pro Asp Leu Cys Thr	Glu Leu Asn Thr Ser	Leu Gln Asp Ile Glu Ile		
145	150	155	160	
Thr Cys Val Tyr Cys	Lys Thr Val Leu Glu	Leu Thr Glu Val Phe Glu		
	165	170	175	
Phe Ala Phe Lys Ser	Val Tyr Gly Asp Thr	Leu Glu Lys Leu Thr Asn		
	180	185	190	
Thr Gly Asn Leu Leu	Ile Arg Cys Leu Arg	Cys Gln Lys Lys Ala Thr		
	195	200	205	
Leu Gln Asp Ile Val	Leu His Leu Glu Pro	Gln Asn Glu Ile Pro Val		
	210	215	220	
His Thr Met Leu Cys	Met Cys Cys Lys Cys	Glu Ala Arg Ile Ala Phe		
225	230	235	240	
Gln Gln Leu Phe Leu	Asn Thr Leu Ser Phe	Val Cys Pro Trp Cys		
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<210> 14

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<220>

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<400> 14

Met Ala Ile Ser Gly	Val Pro Val Leu Gly	Phe Phe Ile Ile Ala Val
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	20	25
Glu Arg Pro Arg Lys	Leu Pro Gln Leu Cys	Thr Glu Leu Leu Leu Arg
	35	40
Arg Glu Val Tyr Asp	Phe Ala Phe Arg Asp	Leu Cys Ile Val Tyr Arg
	50	55
Asp Gly Asn Pro Tyr	Lys Ile Ser Glu Tyr	Arg His Tyr Cys Leu Tyr
65	70	75
Gly Thr Thr Leu Glu	Gln Gln Tyr Asn Lys	Thr Leu His Glu Tyr Met
	85	90
Leu Asp Leu Gln Pro	Glu Thr Thr Asp Lys	Tyr Gln Ala Glu Pro Asp
	100	105
Arg Ala His Tyr Asn	Ile Val Thr Phe Leu	Leu Met Gly Thr Leu Gly
	115	120
Ile Val Cys Pro Ile	Cys Ser Gln Lys Pro	Arg Arg Pro Tyr Lys Leu
	130	135
Pro Asp Leu Cys Thr	Glu Leu Asn Thr Ser	Leu Gln Asp Ile Glu Ile
145	150	155
Thr Cys Val Tyr Cys	Lys Thr Val Leu Glu	Leu Thr Glu Val Phe Glu
	165	170
Phe Ala Phe Lys Ser	Val Tyr Gly Asp Thr	Leu Glu Lys Leu Thr Asn
	180	185
Thr Gly Asn Leu Leu	Ile Arg Cys Leu Arg	Cys Gln Lys Lys Ala Thr
	195	200
Leu Gln Asp Ile Val	Leu His Leu Glu Pro	Gln Asn Glu Ile Pro Val
	210	215
His Thr Met Leu Cys	Met Cys Cys Lys Cys	Glu Ala Arg Ile Ala Phe
225	230	235
Gln Gln Leu Phe Leu	Asn Thr Leu Ser Phe	Val Cys Pro Trp Cys

245

250

255

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 <213> Human papillomavirus HPV 16 E6

<400> 15
 Ile Ser Glu Tyr Arg His Tyr Cys Tyr
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 <211> 9
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<400> 16
 Phe Gln Asp Pro Gln Glu Arg Pro Arg
 1 5

<210> 17
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 <212> PRT
 <213> Human papillomavirus HPV 16 E6

<400> 17
 Arg Arg Glu Val Tyr Asp Phe Ala Phe
 1 5

<210> 18
 <211> 9
 <212> PRT
 <213> Human papillomavirus HPV 16 E6

<400> 18
 Thr Thr Leu Glu Gln Gln Tyr Asn Lys
 1 5

<210> 19
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 <212> PRT
 <213> Human papillomavirus HPV 16 E6

<400> 19
 Phe Gln Asp Pro Gln Glu Arg Pro Arg Lys
 1 5 10

<210> 20
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<400> 20

Ile Ser Glu Tyr Arg His Tyr Cys Tyr Ser
1 5 10

<210> 21

<211> 10

<212> PRT

<213> Human papillomavirus HPV 16 E6

<400> 21

Lys Ile Ser Glu Tyr Arg His Tyr Cys Tyr
1 5 10

<210> 22

<211> 10

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<400> 22

Gly Thr Thr Leu Glu Gln Gln Tyr Asn Lys
1 5 10

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<211> 9

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<400> 23

Lys Leu Pro Gln Leu Cys Thr Glu Leu
1 5

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<400> 24

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<400> 25

Phe Ala Phe Arg Asp Leu Cys Ile Val
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<400> 26
 Tyr Cys Tyr Ser Ile Tyr Gly Thr Thr Leu
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<400> 27
 Ser Glu Tyr Arg His Tyr Cys Tyr Ser Leu
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<400> 28
 Ala Met Phe Gln Asp Pro Gln Glu Arg
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<400> 29
 Leu Leu Arg Arg Glu Val Tyr Asp Phe
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 Ile Val Tyr Arg Asp Gly Asn Pro Tyr
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<400> 31
 Val Tyr Asp Phe Ala Phe Arg Asp Leu
 1 5

<210> 32
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<400> 32
 Cys Tyr Ser Leu Tyr Gly Thr Thr Leu
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<400> 33
 Glu Tyr Arg His Tyr Cys Tyr Ser Leu
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 Lys Leu Pro Gln Leu Cys Thr Glu Leu
 1 5

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<400> 35
 Asp Pro Gln Glu Arg Pro Arg Lys Leu
 1 5

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 His Tyr Cys Tyr Ser Leu Tyr Gly Thr
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<400> 37

Asp Phe Ala Phe Arg Asp Leu Cys Ile
1 5

<210> 38

<211> 10

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<400> 38

Leu Tyr Gly Thr Thr Leu Glu Gln Gln Tyr
1 5 10

<210> 39

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<400> 39

His Tyr Cys Tyr Ser Leu Tyr Gly Thr Thr
1 5 10

<210> 40

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<400> 40

Glu Val Tyr Asp Phe Ala Phe Arg Asp Leu
1 5 10

<210> 41

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<400> 41

Glu Tyr Arg His Tyr Cys Tyr Ser Leu Tyr
1 5 10

<210> 42

<211> 10

<212> PRT

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Val Tyr Asp Phe Ala Phe Arg Asp Leu Cys
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 Gln Ala Glu Pro Asp Arg Ala His Tyr
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<400> 44
 Ile Val Cys Pro Ile Cys Ser Gln Lys
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<400> 45
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<210> 46
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 <213> Human papillomavirus HPV 16 E7

<400> 46
 Gln Ala Glu Pro Asp Arg Ala His Tyr Asn
 1 5 10

<210> 47
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<400> 47
 Asp Leu Gln Pro Glu Thr Thr Asp Leu Tyr
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 Tyr Met Leu Asp Leu Gln Pro Glu Thr
 1 5

<210> 49
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<400> 49
 Thr Leu His Glu Tyr Met Leu Asp Leu
 1 5

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 Leu Leu Met Gly Thr Leu Gly Ile Val
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<400> 51
 Leu Met Gly Thr Leu Gly Ile Val Cys
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 Thr Leu Gly Ile Val Cys Pro Ile Cys
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Asp Leu Gln Pro Glu Thr Thr Asp Leu
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 Gly Thr Leu Gly Ile Val Cys Pro Ile
 1 5

<210> 56
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 Tyr Met Leu Asp Leu Gln Pro Glu Thr Thr
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<210> 57
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 Leu Gln Pro Glu Thr Thr Asp Leu Tyr
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<210> 58
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 Leu Leu Met Gly Thr Leu Gly Ile Val Cys
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 Asp Leu Gln Pro Glu Thr Thr Asp Leu
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<210> 60
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<400> 60

Thr Leu His Glu Tyr Met Leu Asp Leu
1 5

<210> 61

<211> 9

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Thr Pro Thr Leu His Glu Tyr Met Leu
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<210> 62

<211> 9

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Arg Ala His Tyr Asn Ile Val Thr Phe
1 5

<210> 63

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Glu Pro Asp Arg Ala His Tyr Asn Ile
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<211> 10

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<213> Human papillomavirus HPV 18 E6

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Leu Thr Glu Val Phe Glu Phe Ala Phe Lys
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<210> 65

<211> 9

<212> PRT

<213> Human papillomavirus HPV 18 E6

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Lys Leu Pro Asp Leu Cys Thr Glu Leu
1 5

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 Gly Leu Tyr Asn Leu Leu Ile Arg Cys
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 Ser Leu Gln Asp Ile Glu Ile Thr Cys Val
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<210> 70
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 Lys Thr Val Leu Glu Leu Thr Glu Val
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<210> 71
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 Glu Leu Thr Glu Val Phe Glu Phe Ala

1

5

<210> 72

<211> 10

<212> PRT

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Lys Leu Thr Asn Thr Gly Leu Tyr Asn Leu

1

5

10

<210> 73

<211> 9

<212> PRT

<213> Human papillomavirus HPV 18 E6

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Leu Thr Asn Thr Gly Leu Tyr Asn Leu

1

5

<210> 74

<211> 10

<212> PRT

<213> Human papillomavirus HPV 18 E6

<400> 74

Gly leu Tyr Asn Leu Leu Ile Arg Cys Leu

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5

10

<210> 75

<211> 10

<212> PRT

<213> Human papillomavirus HPV 18 E6

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Val Leu Glu Leu Thr Glu Val Phe Glu Phe

1

5

10

<210> 76

<211> 9

<212> PRT

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Ser Val Tyr Gly Asp Thr Leu Glu Lys

1

5

<210> 77

<211> 10

<212> PRT

<213> Human papillomavirus HPV 18 E6

<400> 77

Leu Leu Ile Arg Cys Leu Arg Cys Gln Lys
1 5 10

<210> 78

<211> 9

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Val Tyr Cys Lys Thr Val Leu Glu Leu
1 5

<210> 79

<211> 9

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<400> 79

Val Tyr Gly Asp Thr Leu Glu Lys Leu
1 5

<210> 80

<211> 10

<212> PRT

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<400> 80

Leu Thr Asn Thr Gly leu Tyr Asn Leu Leu
1 5 10

<210> 81

<211> 10

<212> PRT

<213> Human papillomavirus HPV 18 E7

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His Leu Glu Pro Gln Asn Glu Ile Pro Val
1 5 10

<210> 82

<211> 9

<212> PRT

<213> Human papillomavirus HPV 18 E7

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Thr Leu Gln Asp Ile Val Leu His Leu
1 5

<210> 83

<211> 10
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 Ala Thr Leu Gln Asp Ile Val Leu His Leu
 1 5 10

 <210> 84
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 Gln Leu Phe Leu Asn Thr Leu Ser Phe Val
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 <210> 85
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 Met Leu Cys Met Cys Cys Lys Cys Glu Ala
 1 5 10

 <210> 86
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 <400> 86
 Cys Met Cys Cys Lys Cys Glu Ala Arg Ile
 1 5 10

 <210> 87
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 <400> 87
 Phe Gln Gln Leu Phe Leu Asn Thr Leu
 1 5

 <210> 88
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 <400> 88
 Thr Leu Ser Phe Val Cys Pro Trp Cys
 1 5

<210> 89
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 <213> Human papillomavirus HPV 18 E7

<400> 89
 His Thr Met Leu Cys Met Cys Cys Lys
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<210> 90
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 Gln Leu Phe Leu Asn Thr Leu Ser Phe
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<210> 91
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<400> 91
 Ala Phe Gln Gln Leu Phe Leu Asn Thr Leu
 1 5 10

<210> 92
 <211> 25
 <212> PRT
 <213> Homo sapiens

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 Leu Met Ser Ala Gln Glu Ser Trp Ala
 20 25

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<400> 93
 Leu Phe Leu Asn Thr Leu Ser Phe Val
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<210> 94
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 <213> Human papillomavirus HPV 6/11

<400> 94

Leu Leu Leu Gly Thr Leu Asn Ile Val
1 5

<210> 95

<211> 9

<212> PRT

<213> Human papillomavirus HPV 11

<400> 95

Ser Ile Asp Gln Leu Cys Lys Thr Phe
1 5

<210> 96

<211> 9

<212> PRT

<213> Human papillomavirus HPV 6

<400> 96

Thr Ile Asp Gln Leu Cys Lys Thr Phe
1 5

<210> 97

<211> 9

<212> PRT

<213> Human papillomavirus HPV 18

<400> 97

Asn Leu Leu Ile Arg Cys Leu Arg Cys
1 5

<210> 98

<211> 9

<212> PRT

<213> Human papillomavirus HPV 11

<400> 98

Lys Val Leu Ile Arg Cys Tyr Leu Cys
1 5